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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/923,422 | 08/08/2001 | Osamu Tsujii | 35.C15675 | 9933 |
| 5514 | 7590 | 03/30/2005 | EXAMINER | |
| FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112 | | | GENCO, BRIAN C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2615 | |

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,422

Applicant(s)

TSUJII ET AL.

Examiner

Brian C Genco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on December 2, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 19-24, 26-28, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 19-24, 26-28, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>3/18/05</u> |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/4/05</u> | 6) <input type="checkbox"/> Other: _____ |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 17, 2004 has been entered.

Applicant's arguments with respect to claim 1 has been considered but is moot in view of the new ground(s) of rejection.

Interview

Attached is an interview summary of the telephone interview given to Carole Quinn on March 18, 2005. Examiner reminds Applicant of their responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file. See MPEP 713.04.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 19-24, 27, 28, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over (JP 11-151233 to Nonaka) in view of (USPN 6,567,125 to Shimizu) in view of (JP 10-104766 to Tamura et al.).

In regards to claim 1 Nonaka discloses an image sensing apparatus comprising:

a radiation generating apparatus adapted to generate radiation after receiving an exposure preparation signal (e.g., element 10 of Fig. 1; paragraph 0053 the exposure preparation signal is the image sensing request signal 51);

a sensor comprising a plurality of pixels for converting radiation to electrical signals (e.g., element 22 of Fig. 1);

a signal line adapted to read out said electrical signals from said image pickup elements (e.g., signal lines SIG of Fig. 2; paragraph 0037);

a preamplifier adapted to amplify said electrical signals read out from said image pickup elements (e.g., the amplifier drawn with the read-out IC in Fig. 2)

a first power source (e.g., Examiner notes that it is implicit to have a first power source to supply power to said sensor unit in order for it to work).

Nonaka discloses that after receiving an image sensing request signal refreshing and dummy read operations are performed a predetermined number of times, and then exposed to radiation so as to accumulate an image as described in paragraph 0053. Upon completion of the exposure the image signal is output for storage and display as described in paragraphs 0054 and 0055.

Nonaka does not explicitly disclose nor preclude a first power source adapted to set said signal line to a reference potential so as to set said image pickup elements to an initialized state, a second power source adapted to supply electric power to said preamplifier, or a control circuit adapted to control said first power source and said second power source such that said first power source supplies electrical power after a first period of time elapses from receipt of said exposure preparation signal, and said second power source supplies electrical power to said

preamplifier after a second period of time elapses from receipt of said exposure preparation signal, wherein said second time period is longer than said first time period and wherein said first power source is connected to said signal line.

Examiner notes that Nonaka discloses to set said image pickup elements to an initialized state as described in paragraph 0037 and shown in the circuit structure of Fig. 2.

Tamura discloses a circuit structure in Fig. 8 of the disclosure wherein a signal line is set to a reference potential so as to set the image pickup elements to an initialized state wherein a power source 24 is connected to the signal line.

Examiner notes that both of these reset structures are functional equivalents and as such it would have been well within the level of one skilled in the art at the time of the invention to have chosen either of these two known equivalents for initializing the image pickup elements.

Shimizu discloses a amplifier and a second power source, elements 62 and 68 of Fig. 5 wherein a control circuit starts the supply of power to the amplifier after power is supplied to said sensor unit in order to reduce noise and heat generated by the image sensor (column 5, lines 14-44; column 6, lines 5-47). Therefore it would have been obvious to one of ordinary skill in the art to have added the second power supply and control circuit to Nonaka's invention in order to reduce noise and heat generated by the image sensor. As such, the second power source would control the read-out IC of Nonaka's invention shown in Fig. 2.

Therefore, the combination of references as a whole teach to supply power from the first power supply so as to refresh the image after receiving the image sensing request signal, and subsequently to supply power from the second power supply to the preamplifier during the

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readout operation. Examiner notes that the readout operation happens after the refresh operation and therefore the second time period is longer than the first time period.

In regards to claim 19 see paragraph 0054 of Nonaka's disclosure. Note that the irradiation end detection signal 57 is the "exposure completion signal".

In regards to claim 20 see lines 22-27 of paragraph 0053 and paragraph 0054. Note that phototimer 15 is a radiation exposure dose monitor.

In regards to claim 21 Nonaka discloses an image sensing apparatus according to claim 1, further comprising an exposure permission timer adapted to generate a radiation exposure permission signal for said radiation generating apparatus to generate radiation after a predetermined time elapses from supply of the electrical power from said first power source to said sensor (e.g., Examiner notes paragraph 0053, lines 9-19. Note that there is a predetermined elapse of time from the start of the refresh operation, or the start of supplying power to said sensor unit, to the start of generating radiation wherein the exposure permission timer is part of the control unit 25. Note that the image sensing preparation completion signal 55 is the claimed radiation exposure permission signal), and

wherein said control circuit controls said second power source so as to start a supply of electrical power to said preamplifier on the basis of a timing of generating a radiation exposure permission signal (e.g., Examiner notes that on the basis of receiving a radiation exposure permission signal the generation of radiation is started, wherein an exposure period is set (paragraph 0053, lines 22-27; Figs. 4 and 6), wherein on the basis of completion of the exposure time period the read-out operations are preformed and thus the power is supplied to the amplifier).

In regards to claim 22 note that the exposure permission signal is generated on the basis of performing the refresh and dummy read operations, thereby creating a stable state of said sensor unit (paragraphs 0046-0050).

In regards to claim 23 note that the exposure permission signal is generated on the basis of performing the refresh and dummy read operations, thereby creating a stable state of an offset of said sensor unit, namely the offsets created by stray charges and currents (paragraphs 0046-0050).

In regards to claim 24 note that the offset amount of said sensor unit is checked by said exposure permission timer, namely control unit 25, through checking the completion of the refreshing and dummy read operations, wherein upon completion of the refreshing and dummy read operations the exposure permission signal is generated.

In regards to claim 27 as depicted in Figs. 4 and 6 the refresh and dummy read operations are preformed on the basis of the depression of the irradiation button, or the exposure preparation signal, wherein the power is supplied to the sensor unit upon starting the refresh operation as discussed above.

In regards to claim 28 note in Figs. 4 and 6 the offset correction is the refresh and dummy read operation wherein it is started on the basis of the irradiation button, or exposure preparation signal, and upon completion of the refresh and dummy read operations the radiation is generated.

In regards to claim 32 the start command transmitting device is the irradiation button 14 described in paragraph 0053 of Nonaka wherein the operation of the operator is pushing the button.

In regards to claim 33 see Examiner's notes on the rejections above. Note that the entire system depicted in Fig. 1 is a system storing an information relating to radiation. As such, the transmitting of the exposure preparation signal to the radiation generating apparatus and control circuit is transmitted through a system storing an information relating to radiation.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over (JP 11-151233 to Nonaka) in view of (USPN 6,567,125 to Shimizu) in view of (JP 10-104766 to Tamura et al.) in view of (USPN 5,060,069 to Aoki) in view of (USPN 4,675,747 to Hanma et al.).

In regards to claim 26, neither Nonaka nor Shimizu explicitly disclose nor preclude stopping a supply of electrical power to the preamplifier on the basis of a timing of the completion of the read-out operation.

Aoki discloses independently supplying power to the signal processing block (element 18 of Fig. 1) and the compression block (element 22 of Fig. 1) and only when they are being used so as to save power (column 3, lines 1-51), wherein the system control (element 40 of Fig. 1) supplies power to these blocks at the corresponding times of use. In other words the Aoki reference as a whole teaches supplying power to camera systems independently only when those systems are being used so as to save power.

Examiner notes that it is known in the art to only use the read-out circuit at specific time intervals as disclosed by Hanma et al., herein Hanma. Hanma discloses selectively allowing a scanning circuit to be applied to an image sensor only during times in which the scanning circuit is needed (e.g., column 5, lines 20-28 and lines 62-67).

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Examiner further notes that Nonaka discloses an idling period as depicted in Fig. 4 and described in paragraph 0052.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have adapted Nonaka's invention so as to have a power supply control circuit to only supply power to the image sensor and scanning circuit when they are in use in order to save power.

Thus based on the teaching of Aoki and Hanma, after the signals are read out of the image sensor then both the image sensor and preamplifier are not needed. Therefore as an extension of the teaching of Aoki and Hanma it would have been obvious to terminate power to both the image sensor and the preamplifier circuit after the preamplifier circuit finishes reading out all of the signals.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 571-272-7364 or by fax at 571-273-7364. The examiner can normally be reached on Monday thru Friday 8:30am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached at 571-272-7950. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 571-272-2600.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian C Genco
Examiner
Art Unit 2615

March 29, 2005


TUAN HO
PRIMARY EXAMINER